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Palmetto AVIATION

VOLUME 33, NUMBER 2 Published by the South Carolina Aeronautics Commission FEBRUARY, 1982

These can hurt your airplane!

Pilots flying airplanes with wheel fairings or low hanging antennas, gear doors or other appurtances should be cautious of the arresting cables and rubber donut supports at Charleston Air Force Base. Although the cables should be obvious to all general aviation pilots, a spokesman at the base said there had been two cases of damage to a GA aircraft last year. When landing there, don't set down at the end of the runway, because you will run right over them. (Charleston AFB photo). □

Watch for cables if operating at CHS

Pilots of general aviation aircraft, especially those with wheel fairings or low clearance antennas, are cautioned to stay clear of the arresting cables on runway 15 and 33 at Charleston Air Force Base Airport.

The 1¼ inch steel cables, stretched across the ends of each runway, are used to stop high performance military aircraft. They are installed 320 feet from the approach end of runway 15 and 1,460 feet from the approach end of runway 33.

The cables are supported by hard rubber donuts. The top of cables sit 3 and ⅝ inches above the runway, but the tops of the donuts are six inches above the surface.

Lt. Col. Phillip M. Rodke, chief of airfield management at the base said the donuts could damage aircraft with wheel fairings or bottom mounted radio anetennas if the aircraft ran over the cables on take off or landing.

To eliminate the possibility of damage, Col. Rodke suggests that pilots of those aircrafts plan an intersection takeoff to avoid direct contact with the cables. Rodke said the FAA tower personnel will allow intersection departures for those aircraft on request.

The usable length of runway 15 from the taxiway one intersection is 7,000 feet. Runway 33 has 7,200 feet left from the taxiway five intersection.

In the event of an abort, Rodke recommends that an aircraft not proceed to the end of the runway, but turn off at least by taxiway one or five.

When landing, plan to touch down past the cables. □

Toll-free WATS line available

The S.C. Aeronautics Commission recently installed a toll-free WATS line for the convenience of persons around the state who need to report accidents or discuss aircraft registration problems.

The line will be manned Monday through Friday from 8:30 a.m. until 5 p.m. After hours or on weekends, the line will be answered by an automatic answering machine on which you may leave a message.

The toll-free WATS number is 800-922-0574. It can be dialed only within the state. □

PALMETTO AVIATION is an official publication of the South Carolina Aeronautics Commission. It is designed to inform members of the aviation community, and others interested in aviation, of local developments in aviation and aviation facilities and to keep readers abreast of national and international trends in aviation.

The Aeronautics Commission is a state agency created in 1935 by the S.C. General Assembly to foster and promote air commerce within the state.

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Reading Air Show cancelled for 1982

The Reading Show, which has been the leading business-general aviation air show in the U.S. for many years, has been cancelled for 1982 and, according to Arthur M. Horst, President of Reading Aviation Service, it is "most unlikely" that the company will resume operating the show in the future.

Paul R. Doelp, show director since 1971, said factors contributing to the decision included: 1) greatly expanded national and international shows which have captured an increasingly larger percentage of industry interest and participation; 2) inability to meet the needs of better exhibit facilities and continuing shortage of hotel-motel accommodations; 3) air arrival traffic which has been a problem and which may be compounded this year by lack of sufficient air controllers, and 4) sagging general aviation sales.

The show has been scheduled for June 8-10 and would have been the 32nd at the Reading, Pa. airport. □

Pilots should show multi-engine instrument skills, NTSB says

Pilots should be required to demonstrate their ability to fly multi-engine aircraft by instruments before they use an instrument rating acquired in a single-engine plane to fly a multi-engine craft, the National Transportation Safety Board said.

In a recommendation to the Federal Aviation Administration, the Safety Board said single and multi-engine characteristics and emergency procedures differ sufficiently to justify a mandatory checkflight in a multi-engine aircraft for a pilot whose instrument rating was obtained in a single-engine plane.

The Board made its recommendation in reporting on the in-flight breakup and crash of a small, twin-engine aircraft on a business flight near Madisonville, Texas last July 2. The Board held that the accident was caused by the pilot's loss of control and aerodynamic overloading during his efforts to recover that resulted in failure and separation of the horizontal stabilizers.

The reason for the loss of control could not be determined, but the Board found that the pilot's lack of proficiency in flying multi-engine aircraft by instruments was a contributing factor in the accident. The Board theorized that the pilot might have inadvertently used all of the fuel in the Beech 56's main tanks, and could have been distracted from his flight instruments by the sudden need to switch to reserve fuel tanks.

Ground witnesses saw the plane dive out of the base of a cloud with its tail and outboard wing panels missing. The crash in an open field killed the pilot and both of his passengers, one of them the president and board chairman of Universal Weather/Aviation, Inc. of Houston.

Safety-Board investigation showed that the pilot had intended to refuel before his takeoff from Houston's Hobby Airport, but that Universal's fuel supplier at Hobby was out of fuel. Calculations indicated there was enough fuel aboard the plane for its flight to Dallas, but the 46 minutes of flight before the breakup and crash "could have exhausted the fuel believed to have been in the main tanks at takeoff," the Board said.

The pilot was properly certified for the flight, but his instruction in instrument flight was limited to single-engine aircraft, and his total instrument time in multi-engine aircraft was only 2½ hours, the Board reported. He also had not made the required six instrument approaches nor logged the necessary six hours of instrument time in the previous six months.

With the pilot's lack of multi-engine instrument experience, "it is easy to visualize the pilot's reflex action as being abrupt and excessive" if distraction led to an inadvertent descent and speed buildup, the Safety Board said.

The Board found no evidence of pre-impact failure or malfunction of the aircraft's systems or powerplants. Tests for possible control surface flutter were negative. From weather observations and pilot reports, the Board ruled out severe weather as the cause of the structural failure of the stabilizers and the resulting wing failures. □

Planning the Convention

Clemson University officials and the president of the S.C. Agricultural Aviation Association (SCAAA) plan the group's annual convention set for Feb. 18 in Columbia. SCAAA President Jack Ross, left, goes over the tentative convention agenda with Clemson extention entomologist Dr. Ben Kissam and professor Dr. Mack Horton. Dr. Kissam has directed the ag pilot refresher school for the past several years and will do so at this year's convention. (Aeronautics Photo).

Aerial Applicators to meet Feb. 18

The S.C. Agricultural Aviation Association will hold its annual convention and ag pilot refresher school Feb. 18, 19 and 20th at the Quality Inn in Columbia.

Registration will begin at 11 a.m. Feb. 18. The program will get underway at 1 p.m. with a welcoming address and update by John Hamilton, Director, S.C. Aeronautics Commission. John Cureton, chief of the Columbia General Aviation District Office (GADO) and Frank Kelley, GADO Accident Prevention Specialist, will also address the conference.

The Clemson University Refresher Course, directed by Dr. Ben Kissam, will follow at 2:30 p.m. and will be continued on the morning of the 19th. This course is required for aerial applicators. Pilots who plan to work in South Carolina must attend.

The business session will begin at 2 p.m. National Agricultural Aviation Association president Roy Wood will be the featured speaker at the business luncheon at 1 p.m. Feb 19. The annual banquet will begin at 7:30 on the 19th.

The women's association will also be meeting during the convention and many activities have been planned.

The conference registration fee is $25. That includes the luncheon, the banquet and two cocktail parties. Those who register before Feb. 12 will receive a chance on a door prize.

For additional information, contact the SCAAA c/o John F. Barry, 924 Brantley St., Columbia, S.C. 29210. □

Breakfast Club

The Breakfast Club will meet every second Sunday at 10 a.m.

Feb. 21 — Dillon
Mar. 7 — Clemson

Auction set February 15th at Miller

Two aircraft along with miscellaneous equipment and supplies for shop and office will be sold Feb. 15 during a bankruptcy auction at Miller Aeronautics.

The aircraft are a 1964 Piper Aztec and a 1968 Piper Arrow. According to Reid Smith, a Columbia attorney coordinating the auction, the Aztec has 5,497 hours on the airframe, 921 hours on the left engine and 975 hours on the right engine. The Arrow has 4,480 hours on the airframe and 597 hours on the engine.

In addition, there are miscellaneous airplane equipment, parts and supplies; shop equipment — including jacks, a welder, battery charger, grinder — and a lawn mower; office furnishings, equipment and supplies; several flight calculators and a display case.

The auction will begin at 10 a.m. Items may be inspected from 8:30 a.m. until the auction. All items will be sold for cash, lien free, to the highest bidder. For further information contact Reid Smith at (803) 252-8600. □

'A.M. Weather' broadcast at new time

S.C. ETV's popular daily weather information series. "A.M. Weather," now airs Monday-Friday at 7:15 a.m. over ETV Ch. 7, 14, 16, 27, 29, 30, 33, 35, 49. The series was moved back one half-hour from its previous time of 7:45 a.m. at the beginning of January.

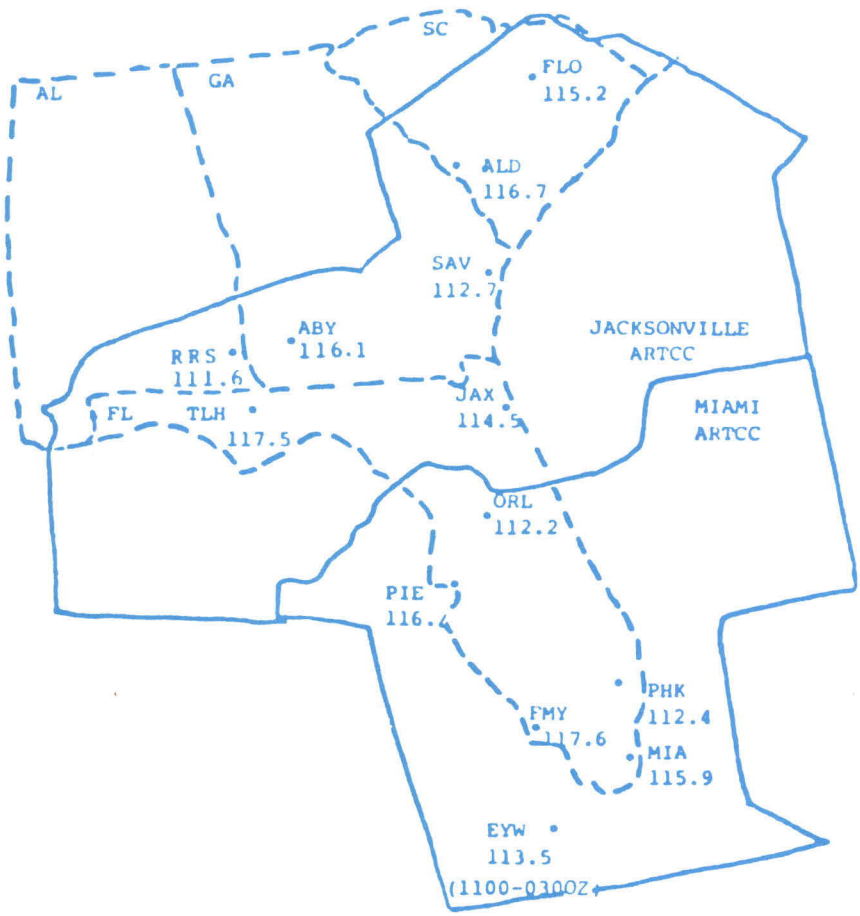
The only all-weather program on national television, "A.M. Weather" has earned a reputation for its no-nonsense approach to reporting the weather. Prepared and presented by professional meteorologists, "A.M. Weather" offers a comprehensive report of current and forecast weather nationwide using the latest satellite and radar data.

Pilots look to "A.M. Weather" for IFR/VFR reports and turbulence and flight level wind information. □

Hazardous Inflight Weather Advisory Service (HIWAS)

On September 9, the Federal Aviation Administration Southern Region began an evaluation of the suitability of broadcasting on a continuous basis, hazardous weather information (SIGMET'S, convective SIGMET's, AIRMET's, and urgent PIREP's) over selected VOR's in the Jacksonville and Miami ARTCC's area. The chart below shows the approximate location and frequency of the VOR's on which the advisory will be broadcast. During the test, Jacksonville and Miami ARTCC's, and all air traffic control towers (ATCT's) within the area depicted below (solid black line), **will discontinue** the direct controller broadcast of SIGMET's and convective SIGMET's over air traffic control frequencies (Exception: Terminal ATIS broadcast of SIGMET information will continue). Additionally, Flight Service Stations (FSS's) within this area **will not** routinely broadcast SIGMET's, Convective SIGMET's and AIRMET's.

PILOTS MUST MONITOR THE APPROPRIATE VOR OR CONTACT THE NEAREST FSS TO OBTAIN SIGMET, CONVECTIVE SIGMET, OR AIRMET INFORMATION.



IMPORTANT: HIWAS will continue until further notice pending evaluation of comments.

User comments regarding the effectiveness of this service are solicited. Mail comments to:

Department of Transportation
Federal Aviation Administration
Southern Regional Headquarters
P.O. Box 20636
Atlanta, Georgia 30320
(Attn. ASO-500)

NTSB Publications groups 1979 accidents

The National Transportation Safety Board released a series of 13 publications that group Board findings on 1979 general aviation accidents by category of flying, type of aircraft or accident, and accident cause.

The Board's classification of general aviation's 4,023 total accidents and 678 fatal accidents showed that in 1979, on the basis of the number of accidents in every 100,000 flight hours. . .

- Ten-year-low accident rates were recorded in aerial application (crop dusting) and corporate/executive flying. In aerial application, 395 total accidents and 27 fatal accidents in 1979 produced respective accident rates that were 50 percent and 70 percent below 1970 levels. Corporate/executive's fatal accident rate, on the basis of 14 fatal accidents in 1979, dropped by 33 percent from 1970.
- Two types of aircraft, turbine-powered craft and rotorcraft, similarly achieved 10-year lows in accident rates.
- In-flight collisions were down sharply from 1978. There were 25 such accidents in 1979, a 29 percent reduction from the 35 a year earlier and the lowest in-flight collision total since 1973. Fatal collisions were down 39 percent, from 23 to 14.
- Multi-engine turbojet aircraft, a new statistical category, had sharply reduced accident rates over the full 1970-79 period. With 15 accidents in 1979, the total accident rate was down 59 percent, from 2.96 to 1.20; with three fatal accidents, that rate was down 62 percent, from 0.63 to 0.24.

The classification of statistics reflected the generally downward trend of overall general aviation accident totals and rates in 1979.

Twelve of the 13 Safety Board publications include computer-printed accident "briefs" that give basic accident facts, probable cause, and accident factors, if any, for 1979 accidents in each category. Statistical tables analyze the accidents by type, injury and cause.

The 12 publications are entitled "Briefs of. . .

Accidents Involving Midair Collisions
Accidents Involving Alcohol as a Cause/Factor
Accidents Involving Corporate/Exeuctive Aircraft
Fatal Accidents Involving Weather as a Cause/Factor
Accidents Involving Rotorcraft
Accidents Involving Turbine-Powered Aircraft
Accidents Involving Aerial Application
Commuter Air Carrier and On-Demand Air Taxi Accidents
Accidents Involving Amateur/Home Built Aircraft
Accidents Involving Missing and Missing, Later Recovered Aircraft
Fatal Accidents Involving Fixed-Wing Multi-Engine Aircraft (Turbojet)
Accidents Involving Gliders

The latter two publications are new and have been addred because of a high level of interest in the aviation community.

The thirteenth publication, "Listing of Aircraft Accidents/Incidents by Make and Model, U.S. Civil Aviation, 1979," includes both general aviation and airline accidents. It identifies accidents and incidents, but does not include briefs. □

Champ may debut in March, April

If no additional delays are encountered, developers of the Champ 7AC predict finished aircraft will be available by March or April.

Champion Aircraft, a newly-formed company which purchased the production rights for Citabria and Decathlon from the Bellanca Company, was also successful in obtaining rights to the Champ 7AC in kit and finished form.

Champion's John Hall recently said that the parties involved are "still ironing out the fine print" on the purchase. Champion expects to be marketing kits from its Alexandria, Minesota plant by early next year.

Hall said the public response to the rebirth of the popular line has been "tremendous." □

Cessna fly-in set

The 1982 Memorial Day Weekend has been set as the time for the first national fly-in of the Cessna 150/152 club, according to club director Skip Carden.

Carden said the fly-in will be May 27th through the 29th at Strother Field, Kansas. Events will include tours of the Cessna assembly plant, safety presentations, maintenance seminars and a barbecue and banquet.

For more information contact:
Cessna 150/152 Club
P.O. Box 15388
Durham, N.C. 27704
Phone: (919) 471-9492

Aviation Calendar

FEB 17-21	Lawyer Pilot Bar Association Meeting. Marriott's Casa Marina Resort, Key West, Fla. Contact: David E. Prewitt (215) 546-5636.
FEB 18-20	South Carolina Agricultural Aviation Association annual convention. Quality Inn, I-20 and Broad River Road, Columbia, S.C. Contact: Jack Barry 772-7889.
FEB 25	FAA Safety Seminar, Florence Airport Terminal Building, Florence, S.C. 7:30 p.m.
MAR 2	FAA Maintenance Seminar, Florence Civil Air Patrol Building, Florence, S.C. 7:30 p.m.
MAR 9	FAA Safety Seminar, Charleston AFB Aero Club, Charleston, S.C. 7:30 p.m.

Airworthiness alerts

The carburetor induction air filter on a Cessna 172L was found deteriorated during an annual inspection. The filtering material had completely deteriorated and the downstream screen mesh was broken loose from the frame.

Some filtering material was lodged in the carburetor venturi throat area. The service manual for the 1972 suggests the filter be removed, inspected and cleaned at least 100 hours of engine operating time and more frequently if warranted by operating conditions.

• • •

Caution should be exercised when installing the FXC Corp. Model 1200 automatic parachute opener on a Greenstar Trac II dual back parachute. It has been reported that when the opener is installed according to the instruction supplied by the manufacturer, the opener will not release both retaining pins due to the position of the automatic rip cord housing.

Winter Landings
controlling the airplane on icy runways

Nothing spoils a winter vacation or business trip in your own airplane as completely as a landing mishap at the final destination. You carry out a long, well-planned and well-executed flight in a thoroughly professional manner, impressing friends and family, only to wind up in some ridiculous position with your tail in the air and the ceiling where the floor ought to be. Even if no one is hurt, your pride is pricked and your wallet is bound to suffer.

Landing accidents tend to increase in the winter, especially in the north or in mountainous areas, whenever the temperature drops down below freezing. The chill factor in landings is something that many pilots ignore when planning winter flights, especially if the weather at their home airport is on the balmy side. If they encounter ice or snow on touchdown they could find the airplane suddenly developing an apparent will of its own as to where this particular trip is going to end.

Putting a ton or more of airplane down on snow or ice, without losing directional control, is no simple matter, even in the absence of crosswind problems. To do it safely you have to develop a sensitive toe for braking plus quick and accurate responses on *all* the flight controls—not merely the rudder. A light plane skittering over glare ice is as much a challenge to control as any condition you are likely to find in general aviation flying. Meeting it successfully takes understanding, training, and recurrent practice. It does not come naturally.

During the five winter months of 1977 (November through March) there were 103 landing accidents on snow or icy conditions according to reports of the National Transportation Safety Board. The majority of these accidents were a direct result of the pilot's inability to maintain directional control of the airplane during the landing roll. Equipment failure was rarely involved, although it sometimes seemed so to the pilot. Typically the pilot found his airplane drifting off the centerline on roll-out and attempted to retain control with the use of brakes and rudder only. Examples:

- **Billings, Mont.** A 700-hour pilot with a commercial certificate attempted to land at a nearby ranch strip, on a near-zero temperature day in December. He had flown into this strip on at least 40 previous occasions within the past 90 days without mishap. But this wintry day the wind was blowing at 20 knots, gusting to 30, from 270°, and there was ice and slush on the ground. The *Cessna 206* was blown off icy Runway 33 to the right, where it collided with a rock fence, causing considerable damage to the landing gear; fortunately no injuries.
- **Van Wert, Ohio.** The pilot of a *Grumman American* had no crosswind problems as he approached the airport with the westerly wind blowing right down the runway at his nose. But it was evening and there were patches of ice on the pavement. After touchdown the airplane began to turn toward the left. The pilot applied full right rudder and brake, without effect. He then applied full power for an attempted go-around, but before he could rotate the airplane struck a snowbank and turned over. Minor injuries, substantial damage.
- **Martinsburg, Pa.** During the landing roll the *Cherokee* veered to the left across the snow-covered runway. The student pilot applied full opposite rudder, but the left gear smashed into a block of frozen snow, snapping off. The wind was reported as nine knots at 290°, ten degrees to the right of the runway. Substantial damage, no injuries.

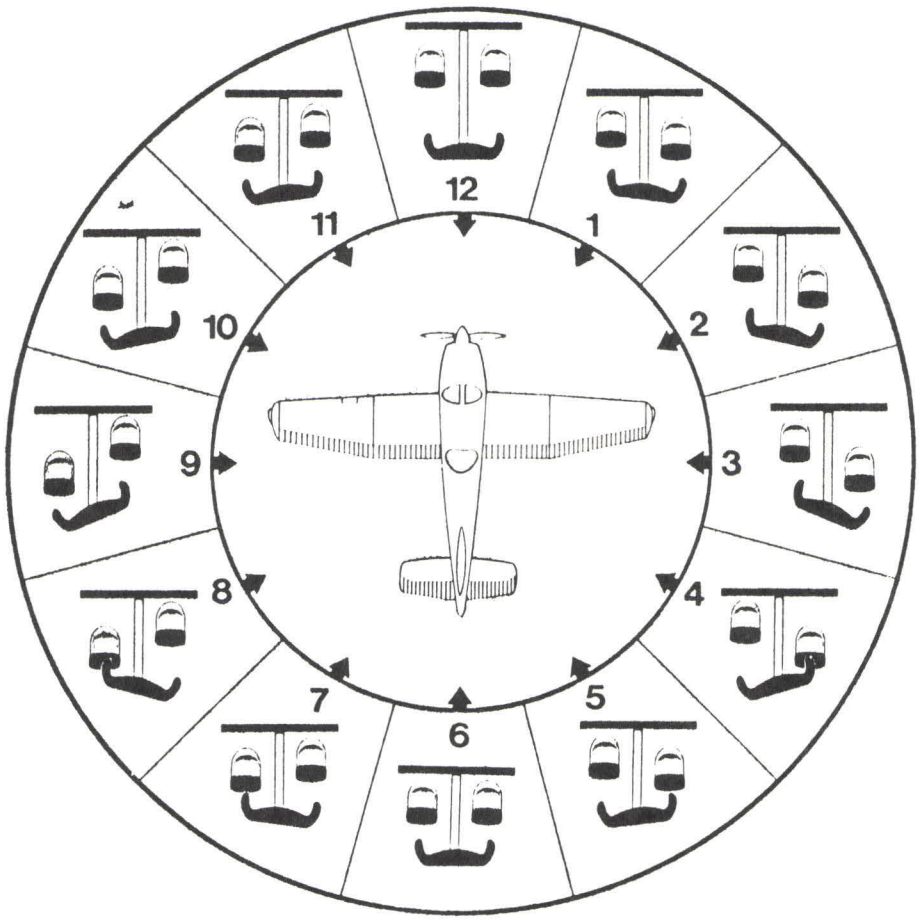
The preparation for landing on snow with wheels is similar to landing on wet or muddy fields. Touchdown should be made at the lowest possible airspeed, with a nose-high attitude maintained by power as required. Braking effect may be nil and probably should be avoided altogether until the airplane slows down, since the surface is unpredictable and a sudden catching of the brakes on a bare patch of surface could throw too much pressure on the nose wheel, or pull the plane to one side. Every effort should be made to line up with the centerline before touchdown.

Even at low speeds, braking action on slippery runways requires a very sensitive touch to avoid initiating a skid, and in some conditions any braking or nose-wheel steering, may be non-effective. Rudder action always gives some control, but whenever the wind (including the airflow component from the moving airplane) is more than nine knots, rudder should be used in conjunction with *aileron* and *elevator,* when taxiing as well as rolling on the runway.

Controlling an airplane on an icy or snowy surface is much like handling a plane on water or on skis: the controls must be manipulated in such a manner as to prevent the wind from turning the plane around on its axis or raising the wing or the tail. In general the technique consists of raising the upwind aileron, together with opposite rudder and back pressure on the wheel — whenever the wind component is in a forward quadrant. This prevents the wind from lightening wheel pressure on the upwind side and from pushing the tail around or up in the air.

With a quartering wind, the upwind aileron is deflected down to avoid raising the wing; the rudder is coordinated and the elevator depressed. Note that with the wind abeam, the controls are manipulated as they would be with a headwind component, since the forward motion of the airplane will produce this effect. This pilot must be alert to sudden wind shifts, and remember to adjust controls appropriately after turning onto or off a taxiway.

Apart from insufficient skill, the main type of pilot error involved with icy runway landings appears to be lack of preparation. Many of the winter accidents were due to the pilot's dearth of knowledge of landing conditions at his destination airport. Often the pilot had decided to save himself the expense of a telephone call to an uncontrolled airport, expecting to be able to assess field conditions from the air. But snow depth and consistency is not all that perceptible from the air, and if the UNICOM is unattended or non-existent, there is always psychological pressure on the pilot to



Control settings for ground run under varying conditions. Arrows show wind direction.

belittle the hazard and chance the landing. Some of the unpleasant surprises he is likely to encounter are:

• **Too much snow.** The pilot of a *Luscombe 8A* made two low passes over the small private airport near Slippery Rock, Pa., to examine the snow depth. He observed that the snow was barely up to the wheel hubs of several parked aircraft, and decided that indicated a tolerable two to three inches on the runway. There was no active UNICOM to confirm his estimate. He made a careful, straight-in approach, touched down into more than a foot of heavy snow and flipped over before traveling 100 feet. Minor injuries, heavy damage. The pilot admitted later that if he had telephoned the airport earlier or examined the snowcover more cautiously he would not have chanced the landing.

• **Hard crust.** A business flight in a *Cessna 150* also ended in a nose-over near Glasgow, Montana. The pilot, who had obtained no advance information regarding runway conditions at a ranch strip, could see that the snow on the frozen turf was not more than three or four inches deep; but what he did not suspect was the presence of a heavy crust over light snow, as a result of day-time thawing in the December sunshine and night freezing. His light plane stayed on top of the snow for several hundred feet after landing, then the nose wheel broke through the crust and over he went. *No injuries but no profits on this trip, after a hefty repair bill.*

• **Locked wheels.** A brand new *Cessna 172* aged very fast on a February day in Ohio, following a crash landing at Urbana Airport with an inadvertent braking application to one wheel. The pilot had not thought to remove the wheel fairings before departure from a slushy airport. By the time he was ready to land, the slush had frozen around the left wheel to the extent that it would not turn. The airplane skidded off the runway and came to rest inverted in deep snow.

• **Underinflated struts.** The pilot of a *Cherokee,* taking off from a snow-covered airport near Pontiac, Michigan, did not notice, in his admittedly brief preflight check (the temperature was about 20°F), that the right wheel strut was not normally extended. When he returned to land, the airplane swerved to the right shortly after touchdown and crashed into a snowbank— fortunately it was only partially frozen. *Expensive repairs; injury to pride only.*

• **Downhill runway.** There was only a thin, icy glaze on the runway when the pilot set his *Tripacer* down on the small airport near Coeur D'Alene, Idaho. He touched down on the numbers and rolled out smoothly along the centerline. However, the airplane did not appear to slow down appreciably as he applied brakes, and he was unable to prevent on overshoot into a stand of pines. He was unaware, until it was pointed out to him by the investigating inspector, that the runway had a four-degree downslop in the direction he had landed — under virtual no-wind condtions. In a contest between brake friction on ice and gravity, gravity usually wins. Determining the slop of a runway from the air in snowy terrain is just about impossible, particularly in the mountainous areas surrounding ski resorts.

Accidents of this kind are often not taken seriously because the injury rate is low, but the potential for tragedy is always there. And in any case they are the quickest way to spoil what starts out as the perfect holiday. The tendency to regard skidding on ice as "unavoidable" is a mistake. Like ice skating, all it takes is professional instruction, plus determined practice. The technique is known. □

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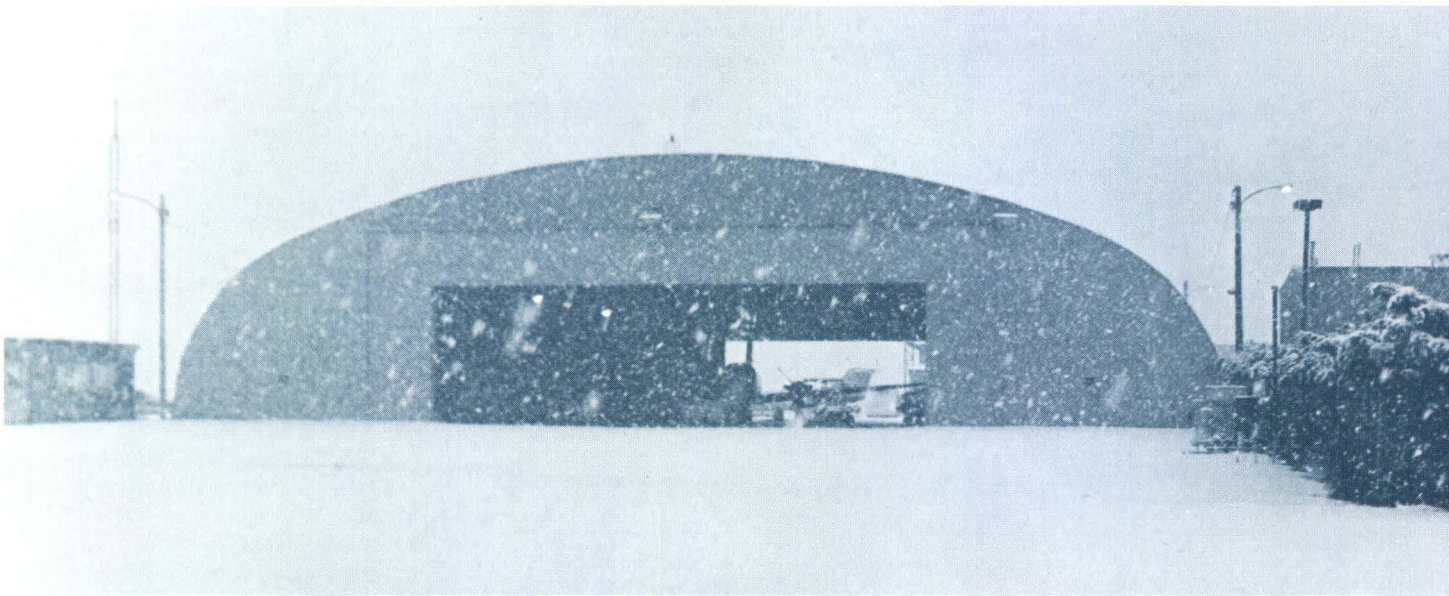

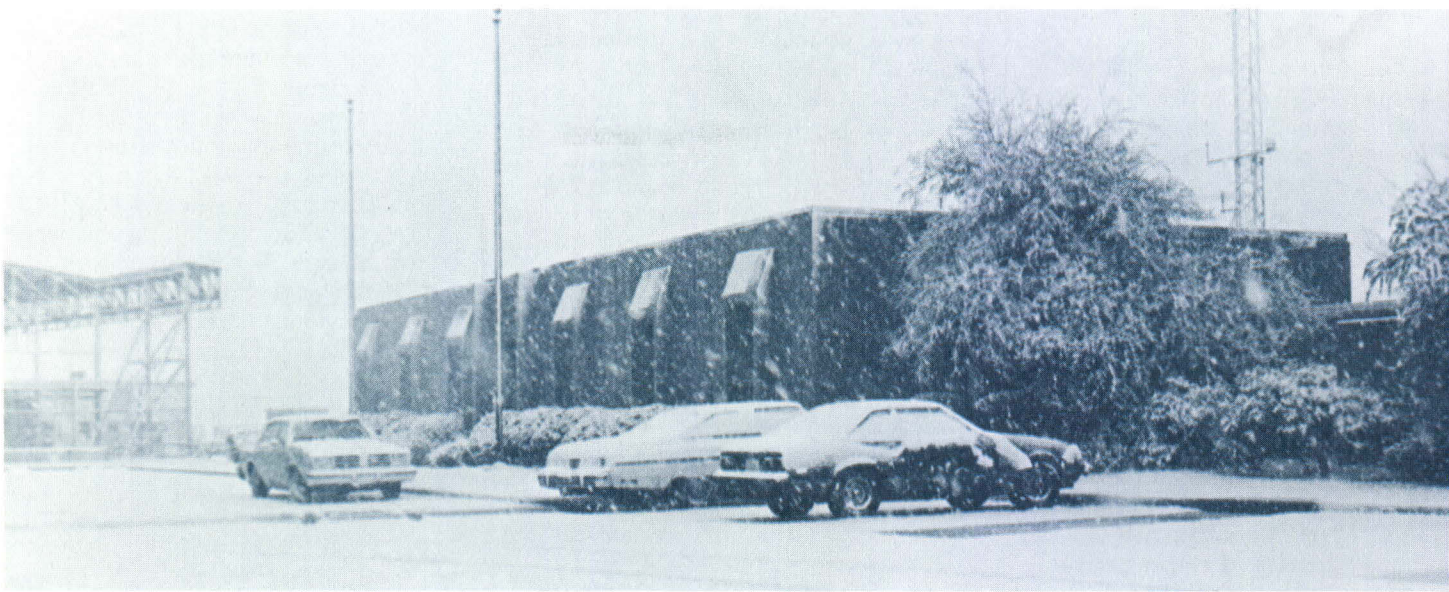

The South Carolina Aeronautics Commission office and hangar at the Columbia Airport are nearly obscured by snow flurries which fell last month, Jan. 7. The snowfall's rapid accumulation surprised nearly everyone and brought operations at the airport to a grinding halt within 30 minutes. (Aeronautics Commission photo)